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ABSTRACT

A study was conducted to discover teachers' preferred means of obtaining information on environmental issues. A survey was administered to 123 teachers attending a one-week workshop on environmental education during the summer of 1978 to determine their use of four mass media: radio, television, newspapers, and magazines. Results revealed that magazines were read by nearly 96% of the teachers, indicating a higher percentage of use than the other three media. Content of the magazines was identified by asking the respondents to name the periodicals, journals, and magazines they read regularly. Magazines directed to general interest audiences were valued more highly as sources of environmental information than those emphasizing environmental interests. (MKM)

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Magazine Division

MAGAZINE READING PATTERNS AND MEDIA EVALUATIONS OF A SPECIAL-INTEREST AUDIENCE

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MAGAZINE READING PATTERNS AND MEDIA EVALUATIONS OF A SPECIAL-INTEREST AUDIENCE

This report summarizes research on the use of mass media by a special-interest population which found that magazines were prime conveyors of information to the group studied. The distinctive influence of magazines was examined in both quantity and quality terms to explore the potential effects of special-interest publications on a particular special-interest audience. The topic was the environment and the audience was a group of teachers representing first through twelfth grades.

Communication concerning environmental matters is a salient topic and magazines have an important role to play in the transmission of environmental information. The topic of "the environment" is not confined to biology but includes social, economic and political elements. Teachers are a population of essential interest in the development of our society because ". . . teachers are important representatives of the attitudes toward which children are socialized."[1] Thus, this investigation was concerned with two factors important to the future of our society. The methods by which the attitudes of this group may be influenced are important for all mass communicators.

The teachers studied in this investigation expressed a special interest in the environment and indicated that their most valued source of information on environmental matters was general interest magazines. They did not value special interest environmental magazines, professional journals or electronic media as highly. The highest ranking for reportorial objectivity was also given to magazine writers. Thoroughness in coverage was the strongest influence in ratings of reliability. This indicates that general interest magazines may have an especially strong influence on special-interest groups.

This information was obtained as part of a Master of Science thesis research which developed "A Profile of Attitudes, Actions and Communication Behaviors of Teachers Entering an Environmental Education Experience."[2]

Perspective

This investigation centered on teachers entering an environmental education experience who would then be expected to conduct some form of environmental education in their classrooms.

Definitions of environmental education have proved to be elusive or complex. One of the better descriptors is the statement of purpose devised by Pettus:

> The goal of environmental education is to bring about informed environmental policies for society which will be compatible with the maintenance of a suitable planetary environment.[3]

The study was concerned with where this important population gets the information used in accomplishing this purpose.

The sources which teachers use to obtain the bulk of environmental information from which they influence their students has been obscure. Except for studies of students in colleges of education,[4] there is little in the literature to show the mass communication media use patterns of teachers gathering information on environmental affairs. There is also little to indicate that teachers are any more selective in their sources for environmental information than a general population.

Teachers are an especially important redistribution system as they participate in the total communication process.[5] Communicatory utility probably plays an important role in

teacher preparation for the classroom just as it does ". . . for future informal interaction with family, friends, co-workers and acquaintances."[6] There is also a special opportunity for coorientation of teachers and pupils,[7] an area largely unexplored in the environmental arena. The classroom is an excellent example of a quasi-mass communication system with interpersonal encounters combined with standard messages.[8] But where do teachers get the information which they then transmit to their pupils?

It is important to examine this question since it is commonly believed that

> Information provides the raw material on the basis of which people form their beliefs, which in turn provide the basis for their attitudes and behaviors.[9]

Stamm[10] and Schoenfeld[11] disagree as to the potential for mass media in changing environmental attitudes. Indeed, Sellers and Jones cite an instance where mass media were avoided in an environmental influence campaign with the efforts to sway attitudes directed at the interpersonal and quasi-mass communication systems of the community.[12] Stamm and Ross found that environmental knowledge bore no relation to community members' attitudes.[13]

Much more research is necessary to determine if special-interest, mass-media sources have important influences on attitudes and behaviors in the environmental area.

Methodology

The population selected for this study consisted of 123 teachers attending one-week, residential, "Teachers' Environmental School" workshops conducted during the summer of 1978. Each of the workshops was staffed by faculty members from Michigan universities. All workshops were held at a conference center in a vacation resort area of Michigan's northern lower peninsula. Graduate and undergraduate credits were offered and were interchangeable between the four universities participating.

The Teachers' Environmental School has a tradition of many years succinctly described as ". . . born of the need for better understanding of the relationship between man and his environment in these dynamic times."[14] Each of the four sessions contributing to the population studied was based on the same theme although each had its own specific emphasis.[15] Enrollees at each workshop could expect to have opportunity to learn concepts and details useful in their professional practice of environmental education.

These groups, comprising the total population studied, were chosen because they were made up of self-selected representatives of the teaching profession who were demonstrating through behavior an interest in their biophysical surroundings, environmental education, or both.

Intensity of these interests and individual motivations for attendance were not determined and may possibly have affected other characteristics measured on an individual-variation basis. Post-data-collection interviews and observations by the researcher indicated that the principal reason for attendance was educational. This is in keeping with the Born and Clark report that teachers enrolled in environmental education workshops primarily "to learn how to environmentalize their teaching" and to receive college credit.[16] It is reasonable to assume that this audience represented teachers with a higher than average interest in the subject area encompassed and represented by environmental education.

The population is considered a well defined special-interest audience supporting their attitudes with behaviors.

Results and Discussion

This report summarizes the major results of the investigation. Details and statistical analysis of the findings are available in the source thesis.[17]

Overall Media Use Pattern

The population self-reported their use of continuing information sources. Emphasis was placed on the four mass media of radio, television, newspapers and magazines. These media were considered readily available, widely used and reasonably current. This selection has been followed quite consistently for such purposes at least as far back as 1939,[18] although television has usurped the former position of motion pictures.

The teachers were asked to report the total time per day spent with each of the four mass media listed in the survey. Their replies are summarized in Table 1. The first point of interest is the high incidence of use, noted in the column labelled "Users %." The figures in this column represent the percentage reporting the use of each medium on a daily basis.

A higher percentage of this population read magazines than read newspapers, watched television or listened to radio on a regular basis. On a total-contact

time basis, however, electronic media were twice as popular as the print media.

Some qualification of the time quantities reported is in order. The radio or television may be "on" without much attention directed to the content. Magazines may be perused for their pictures rather than their verbiage. Newspapers may be selectively read for other than general news content. The quantity of exposure indicated is not necessarily an indicator of the quality of the exposure.

While the mean perceived exposure values have import, a more thorough picture is presented in Figure 1 where the frequency distributions are displayed for each medium. Some of these teachers spend a great deal of time with the print media, although the self-reporting may be a reflection of the perceived status of print instead of actual exposure.

Further analysis showed that less than five percent of this population spent more than three hours per day with the print media but over thirty-five percent spent more than three hours with the electronic media. A considerable amount of discretionary time was spent in the company of the electronic media.

Magazine Readership Contacts

Special attention was given to magazine readership patterns in this special-interest population. Magazines were read by nearly ninety-six percent of the population, a higher use-percent than the other three media. Whereas the mean

exposure time per day was less for magazines than for the other media, magazines often provide greater depth of coverage of their content, have important value as reference material and are delivered at greater intervals. As Schramm noted in "The Nature of an Audience," magazine readers tend to be seeking more depth of information when they read and children turn to magazines and books when they seek information rather than entertainment.[19]

Content of the magazine reading material was identified by asking the respondents to name the "periodicals, journals and magazines" they read regularly. Eight categories were subsequently defined. The researcher's system for classification was arbitrary to serve the purposes of the study. It identified the most prominent type of editorial and advertising information contained in each periodical. The categories and their abbreviated titles are listed in Table 2.

The category of Professional Journals with Biophysical Emphasis is exemplified by Science, Naturalist, Environmental Education Report; Professional Journals with Methods or Technological Emphasis by Teacher, Learning, Science Teacher, National Biology Teacher, Earth Science; Special Interest Magazines with Generalized Natural History or Environmental Emphasis by National Geographic, National Wildlife, International Wildlife, Audubon, Smithsonian, Mother Earth News, Environmental News; Special Interest Magazines with Outdoor Activities and Sports Emphasis by Sports Afield,

Sports Illustrated, Outside, Michigan Out-of-Doors; Special Interest Magazines with Science and Technology Emphasis by Popular Science, Scientific American, Science News, Successful Farming, Science Digest; General Interest Magazines with News Emphasis by Time, Newsweek, People, Atlas World News Review; and General Interest Magazines with Features Emphasis by Good Housekeeping, Woman's Day, New Republic, Atlantic Monthly, Consumers Report, Harper's, Fortune, Ideals.

The popularity of each category is displayed in Figure 2. Popularity was determined by finding the percentage of respondents indicating they regularly read in the particular category. The simple-frequency of regular exposure to the content offers a picture of reading tastes in these periodical categories.

The natural history and environmental information magazines ranked higher than all other categories for this self-selected group, confirming expectations. It was not, however, expected that less than forty percent of these teachers would read professional journals regularly, a category which includes those periodicals aimed directly at teachers and designed to assist them in improving their professional performance.

Cosmopolitan interests are suggested in the high frequency of exposure to the two categories of general interest magazines, News and Features. When these two categories are combined, 69.6 percent regularly read in one

or both categories. The Special Interest, Nature and Environment category becomes essentially equal to the combined general interest magazines.

The scope of readership within each category is shown in Table 3 with some respondents reading as many as six publications within a single category. Nor was this range especially misleading, as is often the case with range data. The high variation from mean shown by the standard deviation suggests that, for this population, reading one periodical in a category often leads to reading several more publications in the same category.

Magazine Readership Time

Numbers of contacts are only the beginnings of quantity evaluation. The time spent with each periodical category expands this evaluation potential and also offers some indication of the "quality" of the contacts. The hours self-reported as spent with each periodical category each month are arrayed in Table 4. Again, the SD is so extreme for each category that one is led to conclude that if these teachers read in the category at all, they will spend a considerable amount of time in it and are thus dedicated consumers of the content -- whatever its nature. Comparison of Tables 3 and 4, number of contacts and time, shows the same order of categories with the single exception of General Interest News, doubtless a result of its weekly frequency of publication.

Combining number of magazine titles read per month and the hours spent with magazines provides an approximate measure of magazine use intensity in each category, or the thoroughness with which these magazines are read. Results of this analysis are summarized in Table 5.

The categories are ranked, in Table 5, according to average hours per month per title, or the intensity of use per title. The order is quite different from that in Tables 3 and 4.

In Table 5, General Interest News receives the most intensive use, probably again a function of its weekly frequency. By this means of evaluation, the reduction to a weak last place of the Special Interest Nature, Environment seems to indicate that consumption in this category is superficial. Professional Journals of Methods and Technology also move far down the list, indicating that they, too, are not actually consumed with much dedication despite the frequent contacts.

There appears to be a decided contradiction between the interests expressed by this population and their consumption of media especially tailored to their interests. One is led to ask if this phenomenon is peculiar to this special interest or may be more commonly encountered with other special interests and publications directed at those special interests.

Perhaps the publications are supported or maintained by the readers' interest only in contact with publications in

the subject area rather than in consumption of the content. Repetition of similar content may be so extensive that intensity of use is unnecessary and the reader consumes only the occasional article offering new or revised information -- and the advertising. Repetition of information may help maintain existing attitudes and behaviors without having much influence on change potential, supporting Stamm's thesis.[20] Indeed, this repetition may develop into a lack of communicatory utility, subscription serving to support an interest-identity for the individual, not necessarily extending beyond the personal confines.

Attitudes and Magazine Readership

A major part of the study, of which this report is a part, included an attitude measure regarding environmental affairs. Magazine readership was tested against the attitude measures to determine if there was a correlation between reading patterns and environmental attitudes. Pearson's product-moment correlations showed no correlation, even between environmental attitudes and exposure to the Nature, Environment magazine category.

Quality Perceptions

Although the quantity of exposure to mass media information sources has important relevance, the audience perceptions of quality in the exposure must not be overlooked. The special-interest population studied was a self-selected group of a distinctive population. They may also represent

a sample of two populations: of teachers in general with a special interest in environmental affairs, and of a general population of citizens with a special interest in environmental affairs and with advanced levels of education. Thus, quality perceptions may well extend beyond the parameters of the group studied into larger populations and so be of even greater interest.

The value to this population of the various sources of information available and used on a continuing basis was one of the quality measures desired. To achieve a quantification of value, two rank order perceptions were measured and then combined. It was stressed to the respondents that the rankings were to relate only to environmental information. This specification should not be wholly assumed, however. Effort on the part of the respondents to adhere to this directive undoubtedly faded during the response period. The assumption should be that ratings are a blend between environmental information and general information. In the larger context of the environment, it is probably meaningless to attempt to maintain a distinction.

The first of these rankings was of objectivity. With the strong differences in physical form, sensory impact, commitment to consumption and scale of treatment between the four mass media in this study, it was considered desirable to use a common denominator for comparative purposes. The premise was therefore adopted that this population could

identify and evaluate the reporters of information for the four media and that the reporters could then serve as the comparative base across the media.

By emphasizing the reporter, the influence of visual materials and other aspects of physical form would tend to be reduced. For example, the visual presence and dramatized style of the television reporter would still be operant, but changing the response system to a rank-ordering by perceptions of objectivity was thought a reasonable effort to diminish their effects. Although the resulting device is not sophisticated, the ranking displayed in Figure 3 from data in Figure 4 offers intuitive support for its validity.

The magazine writer ranked first by a considerable margin in the evaluation of relative objectivity. Electronic media reporters trailed far behind.

There may be two particular factors at work in this. The length of a magazine article allows inclusion of a considerable number of facts and thorough exploration of relationships. The other three media are more abbreviated in their content. The second factor is selectivity in the seeking of information and in perception. Through their reading habits revealed in this study, it appears that this population of teachers read those magazines which appealed to their special interests. It would be naive to assume that they read randomly. It is more likely that they selected magazine reading purposefully, with a predisposition to believe and value the content of their selections. It would

then be expected that they could do no less than cast a strong vote of confidence in magazines. Other sources may be viewed as more ubiquitous with less personal responsibility. It is necessary to accept the whole package offered by other media, selectively "editing" content. A lower ranking is then permissible.

The other rank order measure making a contribution to the overall value ranking was labelled for convenience "reliability." This evaluation was to measure perceptions of currency, accuracy and thoroughness of coverage. The terms up-to-date, accurate and thorough were used in the study instrument but were then abbreviated for reporting convenience into the single term.

A variety of information sources was selected for this broad evaluation. An essential purpose was to test the relative position of "colleagues" as a representative of interpersonal information sources and "formal classes" as representative of quasi-mass media. Bulletins of the Cooperative Extension Service were added to fulfill another purpose of the study but represent a special kind of publication falling between the scholarly professional journals and the popular press, still maintaining a special interest identity.

Figure 5 illustrates the relative position of each of the groupings. Special interest periodicals lead the way with professional journals, Extension Service Bulletins and formal classes grouped together not far behind. Colleagues,

general interest magazines and newspapers are apparently considered decidedly inferior to the other sources by this population. Thoroughness, followed or accompanied by accuracy, seems to play an essential role in evaluation of a medium when the medium is transmitting environmental information. Perceptions of timeliness do not appear to play a prominent role in this evaluation.

Source Value Rank

Source value rank was compiled from the objectivity and reliability measurements. The methodology for this analysis is discussed in the source report.[21] Magazines were considered definitely superior to all other sources of environmental information by this population. General interest magazines considered separately from all others were nearly tied with colleagues and newspapers in terms of their value as information sources. Television and radio fell at the bottom of the scale as displayed in Table 6.

It is especially pertinent that this group of teachers appears to get its information from magazines and values this source of information not only higher than the electronic media but also higher than their own colleagues, who would be assumed to be a knowledgeable peer group, regularly available as an information source.

Conflict Resolution

The study attempted to identify a generally available source of perceived value to the respondents for resolving conflicts in information received. No particular mass medium seemed to be of special value. From the data collected, it also appears that family and friends were not especially valued in resolving information conflict. Colleagues were valued no more than mass media.

These teachers apparently rely heavily on knowledge already acquired, or less immediate and ubiquitous sources than mass media or interpersonal sources, when confronted with conflicting environmental information. Perhaps newly encountered dissonant information is ignored or judged irrelevant to themselves. Perhaps the continuing flux in environmental information is sufficiently confusing that only the information which reinforces existing attitudes and beliefs, or serves a self-centered special interest, is selected for acquisition.

Conclusions

This group of teachers indicated that general interest magazines were their most valued source of information on the environment when choosing from magazines, newspapers, radio and television. They read many special-interest magazines and professional journals regularly, but the intensity of use measurements suggest that they do not read them thoroughly. In spite of their special interest, they spent more time with and gave higher ratings to general interest magazines.

This population gave the highest ranking for reportorial objectivity to magazine writers followed in order by newspaper reporters, television news reporters and radio news reporters. These readers placed importance on thorough coverage of content, perhaps reflecting their educational levels rather than their special interests.

When presented with conflicting information on environmental matters, these teachers had no preference for any particular mass medium to aid in resolving the conflict.

It appears from this study that repetitive content may play a role in limiting the usefulness of special-interest publications. Communicators attempting to reach particular audiences through special-interest magazines may have limited influence because of the effects of redundancy. The messages

may not be getting through except to reinforce pre-existing beliefs.

Those wishing to reach a special-interest audience with demographics similar to those of this study should look at the effects of general interest as well as special interest magazines on their target audience.

TABLE 1.

CONTINUING INFORMATION SOURCE PROFILE--
MINUTES PER DAY WITH MEDIUM

	N	Mean	SD	95% C.I.		Mear. hours	Users %
				+ or -	%		
Magazines	122	42.484	35.254	6.319	14.9	0.708	95.9
Newspapers	123	47.846	27.803	4.963	10.4	0.797	94.3
Television	123	93.049	56.943	10.164	10.9	1.55	93.5
Radio	122	112.992	138.358	24.799	21.9	1.88	87.7

TABLE 2.

PERIODICAL CATEGORIES

Category	Abbreviated title
Professional Journals with Biophysical Emphasis	Prof. Journ. Biophysical
Professional Journals with Methods or Technological Emphasis	Prof. Journ. Meth. & Tech.
Special Interest Magazines with Generalized Natural History or Environmental Emphasis	Spec. Int. Nature, Environ.
Special Interest Magazines with Outdoor Activities and Sports Emphasis	Spec. Int. Sports
Special Interest Magazines with Science and Technology Emphasis	Spec. Int. Sci. & Tech.
Special Interest Magazines with Other Emphases	Spec. Int. Other
General Interest Magazines with News Emphasis	Gen. Int. News
General Interest Magazines with Features Emphasis	Gen. Int. Feature

TABLE 3.

PERIODICALS READ, NUMBER EACH CATEGORY

Category by mean rank	N	Range	Mean	SD	95% C.I.	
					+ or -	%
Combined Gen. Int.	112	N.A.	1.536	1.542	0.29	18.8
Spec. Int. Nature, Environ.	112	0-6	1.482	1.369	0.26	17.3
Gen. Int. Feature	112	0-5	0.964	1.266	0.24	24.6
Prof. Journ. Meth. & Tech.	112	0-5	0.723	1.067	0.20	27.7
Gen. Int. News	112	0-2	0.571	0.694	0.13	22.6
Spec. Int. Sports	112	0-4	0.384	0.830	0.16	40.6
Spec. Int. Other	112	0-3	0.288	0.594	0.11	38.5
Spec. Int. Science & Tech.	112	0-5	0.161	0.609	0.11	70.8
Prof. Journ. Biophysical	112	0-1	0.009	0.094	0.02	200.0

N.A.=Not applicable

TABLE 4.

HOURS READING PERIODICALS
PER MONTH, BY CATEGORY

Category by mean rank	N	Range	Mean	SD	95% C.I.	
					+ or -	%
Combined Gen. Int.	111	0-40	[illegible]98	6.623	1.25	24.0
Spec. Int. Nature, Environ.	111	0-20	2.784	3.402	0.64	23.0
Gen. Int. Feature	112	0-28	2.482	4.058	0.76	30.6
Gen. Int. News	110	0-20	2.355	3.883	0.73	31.2
Prof. Journ. Meth. & Tech.	112	0-20	1.411	2.776	0.52	36.9
Spec. Int. Sports	111	0-20	1.000	2.796	0.53	52.6
Spec. Int. Other	112	0-12	0.768	1.898	0.36	46.4
Spec. Int. Science & Tech.	112	0-8	0.357	1.341	0.25	70.3
Prof. Journ. Biophysical	112	0-3	0.027	0.283	0.05	196.3

TABLE 5.

INTENSITY OF PERIODICAL USE BY CATEGORY

Category by Intensity Rank	Mean hours per month	Mean minutes per month	Mean number of titles	Mean hrs. per title per month
Gen. Int. News	2.355	141.3	0.57	4.12
Combined Gen. Int.	5.198	311.9	1.54	3.38
Prof. Journ. Biophysical	0.027	1.6	0.01	3.00
Spec. Int. Other	0.768	46.1	0.29	2.67
Spec. Int. Sports	1.000	60.0	0.38	2.60
Gen. Int. Feature	2.482	148.9	0.96	2.57
Spec. Int. Science & Tech.	0.357	21.4	0.16	2.22
Prof. Journ. Meth. & Tech.	1.411	84.7	0.72	1.95
Spec. Int. Nature, Environ.	2.784	167.0	1.48	1.88

TABLE 6.

SOURCE VALUE RANK

Information Source	Value Rank Range: 1 - 7
Special Interest Periodicals	Hi 1.80
Professional Journals	2.40
All Magazines	2.87
Colleagues	4.40
General Interest Magazines	4.42
Newspapers	4.54
Television	5.17
Radio	Lo 6.09

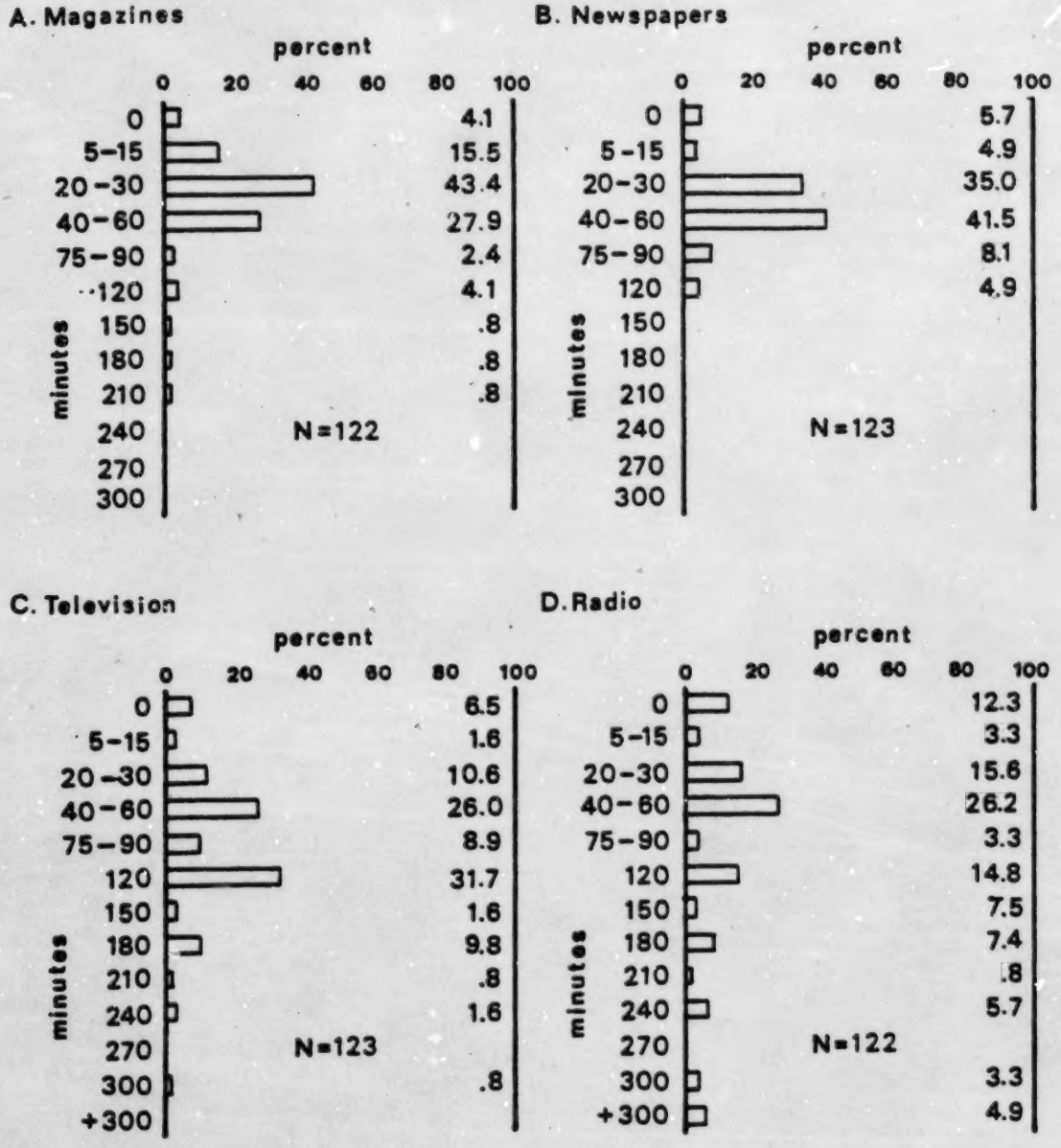

Figure 1. Media Exposure Minutes per Day

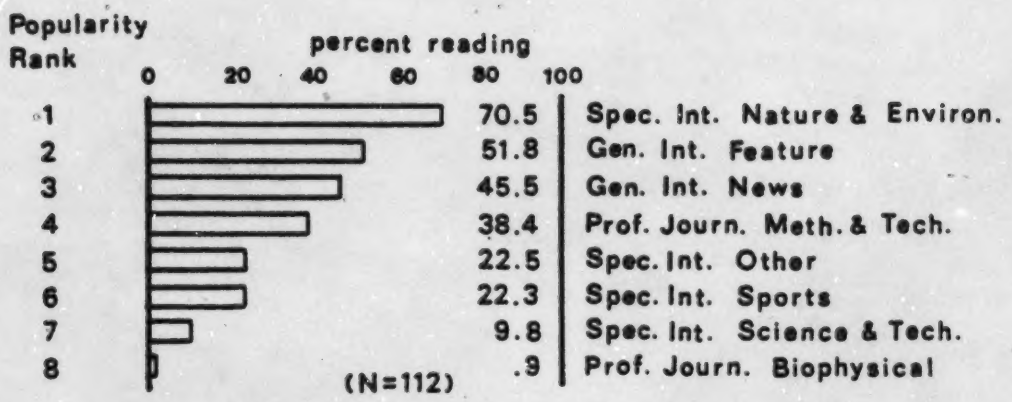
Popularity Rank
percent reading
0 20 40 60 80 100
1 70.5 Spec. Int. Nature & Environ.
2 51.8 Gen. Int. Feature
3 45.5 Gen. Int. News
4 38.4 Prof. Journ. Meth. & Tech.
5 22.5 Spec. Int. Other
6 22.3 Spec. Int. Sports
7 9.8 Spec. Int. Science & Tech.
8 .9 Prof. Journ. Biophysical
(N=112)

Figure 2. Periodical Reading Popularity by Category

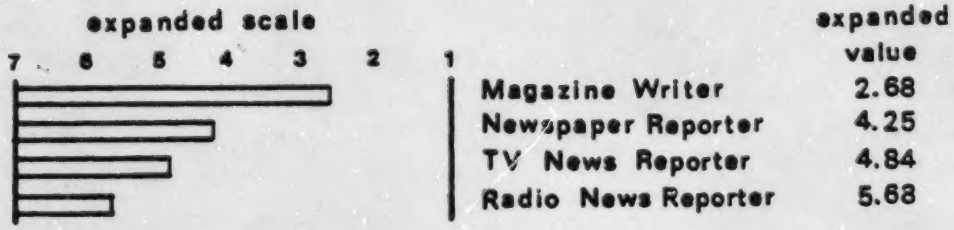

Figure 3. Objectivity Rank

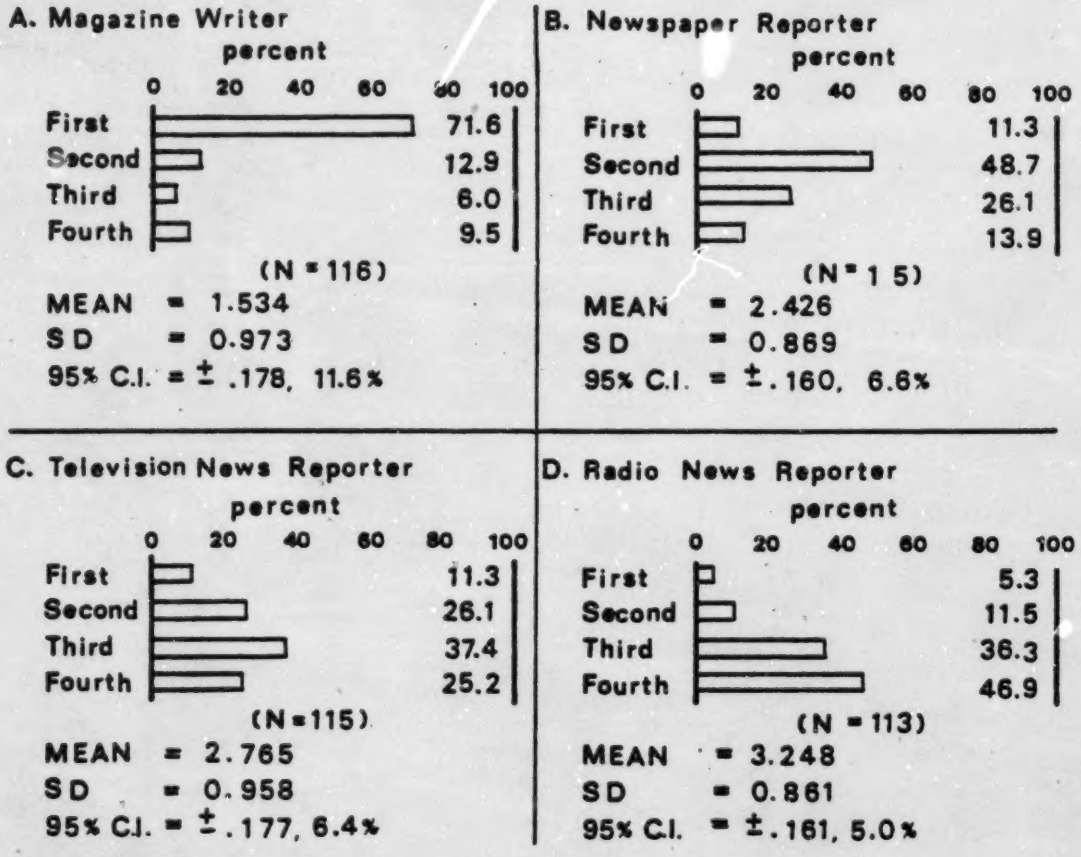

Figure 4. Objectivity Rank Distribution

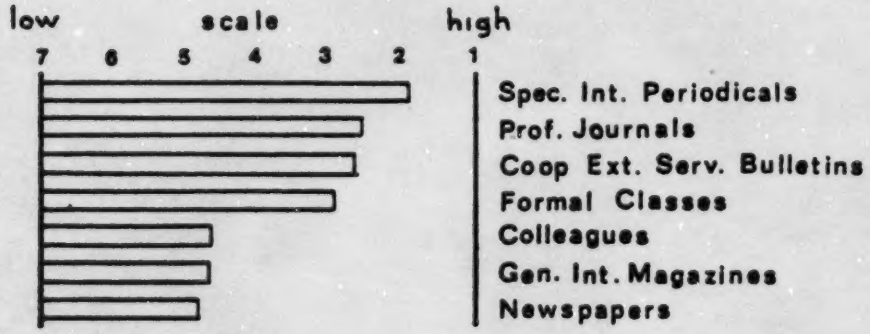

Figure 5. Reliability Rank

FOOTNOTES

[1]Robert D. Hess and Judith V. Torney, The Development of Political Attitudes in Children (Garden City, New York: Doubleday, Anchor Books edition, 1968), p. 15.

[2]Douglas C. Covert, "A Profile of Attitudes, Actions and Communication Behaviors of Teachers Entering an Environmental Education Experience" (M.S. thesis, Michigan State University, 1980).

[3]Alvin Pettus, "Environmental Education and Environmental Attitudes," Journal of Environmental Education 8 (Spring 1977): 3, 40-47.

[4]Robert Ben Peyton, "An Assessment of Teachers' Abilities to Identify, Teach and Implement Environmental Action Skills" (Ph.D. dissertation, Southern Illinois University at Carbondale, 1977).

[5]John T. McNelly, "Mass Media and Information Redistribution," Journal of Environmental Education 5 (Fall 1973): 1, 31-36.

[6]Charles K. Atkin, "Anticipated Communication and Mass Media Information-Seeking," Public Opinion Quarterly 36 (1972): 188-99.

[7]Steven H. Chaffee and Jack M. McLeod, "Sensitization in Panel Design: A Coorientational Experiment," Journalism Quarterly 45 (1968): 661-69.

[8]W. Phillips Davison, James Boylan and Frederick T. C. Yu, Mass Media Systems and Effects (New York: Praeger, 1976).

[9]McNelly, "Mass Media and Information Redistribution," p. 31.

[10]Keith R. Stamm, "Environment and Communication," in Current Perspectives in Mass Communication Research, ed. F. Gerald Kline and Phillip J. Tichenor (Beverly Hills, Calif.: Sage Publications, 1972).

[11]Clay Schoenfeld, "Environmental Mass Communications: Problems and Promises," Journal of Environmental Education 6 (Spring 1975): 3, 20-26.

[12]Leonard Sellers and David W. Jones, Jr. "Environment and the Mass Media," Journal of Environmental Education 5 (Fall 1973): 1, 51-57.

[13]K. R. Stamm and J. E. Ross, "Rationality of Opinion on a Controversy in Conservation," Journalism Quarterly 43 (Winter 1966): 762-65.

[14]Teachers' Environmental School, descriptive brochure, Department of Natural Resources and MEEA, Lansing, Michigan, 1978.

[15]Ibid.

[16]Ted Born and Edward Clark, "Environmentalize Your Teaching: A Teachers Workshop Model," Journal of Outdoor Education 11 (1977): 2, 11-14.

[17]Covert, "Profile."

[18]Forest Olin Capps, "A Survey of the Conservation Information Possessed by Pupils in Missouri High Schools" (Ph.D. dissertation, University of Missouri, 1939).

[19]Wilbur Schramm, "The Nature of an Audience," in The Process and Effects of Mass Communication, ed. Wilbur Schramm and Donald F. Roberts (Urbana, Ill.: University of Illinois Press, 1977), pp. 193-5.

[20]Stamm, "Environment and Communication."

[21]Covert, "Profile."

BIBLIOGRAPHY

Atkin, Charles K. "Anticipated Communication and Mass Media Information-Seeking." Public Opinion Quarterly. 36 (1972): 188-99.

Born, Ted and Clark, Edward. "Environmentalize Your Teaching: A Teachers Workshop Model." Journal of Outdoor Education. 11 (1977): 2, 11-14.

Capps, Forest Olin. "A Survey of the Conservation Information Possessed by Pupils in Missouri High Schools." Ph.D. dissertation. University of Missouri, 1939.

Chaffee, Steven H. and McLeod, Jack M. "Sensitization in Panel Design: A Coorientational Experiment." Journalism Quarterly. 45 (1968): 661-69.

Covert, Douglas C. "A Profile of Attitudes, Actions and Communication Behaviors of Teachers Entering an Environmental Education Experience." M.S. thesis. Michigan State University, 1980.

Davison, W. Phillips; Boylan, James; and Yu, Frederick T. C. Mass Media Systems and Effects. New York: Praeger, 1976.

Hess, Robert D. and Torney, Judith V. The Development of Political Attitudes in Children. Garden City, New York: Doubleday, Anchor Books edition, 1968.

McNelly, John T. "Mass Media and Information Redistribution." Journal of Environmental Education. 5 (Fall 1973): 1, 31-36.

Pettus, Alvin. "Environmental Education and Environmental Attitudes." Journal of Environmental Education. 8 (Spring 1977): 3, 40-47.

Peyton, Robert Ben. "An Assessment of Teachers' Abilities to Identify, Teach and Implement Environmental Action Skills." Ph.D. dissertation. Southern Illinois University at Carbondale, 1977.

Schoenfeld, Clay. "Environmental Mass Communications: Problems and Promises." Journal of Environmental Education. 6 (Spring 1975): 3, 20-26.

Schramm, Wilbur. "The Nature of an Audience." In The Process and Effects of Mass Communication, pp. 193-5. Edited by Wilbur Schramm and Donald F. Roberts. Urbana, Ill.: University of Illinois Press, 1977.

Sellers, Leonard and Jones, David W., Jr. "Environment and the Mass Media." Journal of Environmental Education. 5 (Fall 1973): 1, 51-57.

Stamm, Keith R. "Environment and Communication." In Current Perspectives in Mass Communication Research, pp. 265-94. Edited by F. Gerald Kline and Phillip J. Tichenor. Beverly Hills, Calif.: Sage Publications, 1972.

Stamm, K. R. and Ross, J. E. "Rationality of Opinion on a Controversy in Conservation." Journalism Quarterly. 43 (Winter 1966): 762-65.

Teachers' Environmental School. Descriptive brochure. Lansing, Michigan: Department of Natural Resources and MEEA, 1978.